

Sex differences in the events that elicit jealousy among homosexuals

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Abstract

When individuals are asked which event would upset them more—a partner's emotional infidelity or a partner's sexual infidelity—among heterosexuals more men than women select a partner's sexual infidelity as the most distressing event, whereas more women than men select a partner's emotional infidelity as the most upsetting event. Because homosexuals' mating psychology is unlike that of heterosexuals, the present study examined which of these two events is more upsetting in a sample of 237 Dutch homosexuals. In support of our hypothesis it was found that, whereas gay men more often than lesbian women chose a mate's emotional infidelity as the most upsetting event, lesbians more often than gay men chose a mate's sexual infidelity as the most upsetting event. In addition, analyses showed that the effect of participant sex on infidelity choice was mediated by beliefs with regard to the co-occurrence of sexual and emotional infidelity. Apparently, with respect to choosing the most upsetting type of infidelity of their partner, homosexuals resemble heterosexuals of the opposite sex. Several explanations are discussed for this finding.

Jealousy has been defined as “a negative response to the actual, imagined or expected emotional or sexual involvement of the partner with someone else” (Buunk & Bringle, 1991). Most studies on jealousy have reported no sex differences in jealousy (e.g., Bringle & Buunk, 1985; Bringle & Williams, 1979; Rich, 1991), and those studies that have found sex differences have not consistently found one sex to be more jealous than the other (see also Buunk, 1987; Buunk & Hupka, 1987; Wiederman & Allgeier, 1993). Certain investigators have suggested that the lack of gender differences in jealousy may be caused by the fact that measures of jealousy only assess the general degree of jealousy, ignoring the specific circumstances under which jealousy is aroused (Wiederman & Allgeier, 1993; Wilson & Daly, 1992). Two

decades ago certain evolutionary psychologists argued that, because of men and women's different reproductive biology, men and women will differ psychologically in the cues that elicit jealousy (Daly, Wilson, & Weghorst, 1982; Symons, 1979).

In humans, as in most mammals, fertilization and gestation occur within women, and not within men. Men, therefore, have confronted a problem not encountered by women, namely the problem of uncertainty with regard to the paternity of their offspring. When their mate is sexually unfaithful, men may, unknowingly, invest heavily in another man's offspring without passing on their own genes. Because investing in genetically unrelated offspring comes at substantial reproductive cost to men, it has been suggested that jealousy in men is elicited more by signs of a mate's sexual infidelity than in women (Buss, Larsen, Westen, & Semmelroth, 1992). Women, in contrast, do not suffer from uncertainty concerning the maternity of their offspring. They risk, however, the loss of man's re-

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sources if he directs his resources to alternative mates (Trivers, 1972). Because men can copulate with women while minimizing their investments, cues to an emotional bond may be reliable indicators to women of the potential loss of their mate's investment. Therefore, it has been argued that jealousy in women is aroused more by signs to a mate's emotional unfaithfulness than it is in men (Buss et al., 1992).

The gender difference predicted by these evolutionary psychologists was explicitly tested by a study of Buss and colleagues (1992). In their study, Buss et al. presented participants with dilemmas in which they had to choose between a mate's sexual unfaithfulness or a mate's emotional unfaithfulness as the most upsetting event. Buss et al. demonstrated that more men than women selected a partner's sexual infidelity as the most upsetting event, whereas more women than men reported a partner's emotional infidelity as the most upsetting event. This finding has been replicated several times, in, for instance, the United States, the Netherlands, Germany (Buunk, Angleitner, Oubaid, & Buss, 1996), Korea, Japan (Buss et al., 1999), and Sweden (Wiederman & Kendall, 1999).

A number of researchers (DeSteno & Salovey, 1996; Harris & Christenfeld, 1996) have argued that the finding that men are especially bothered by evidence of their partner's sexual infidelity, whereas women are distressed more by evidence of emotional infidelity, should not be attributed to evolved differences. As an alternative, they suggest that this gender difference is based on differences in how evidence of men and women's infidelity is interpreted (Harris & Christenfeld, 1996; DeSteno & Salovey, 1996).

DeSteno and Salovey (1996) presented the so-called *double-shot* hypothesis that states that some individuals believe that emotional and sexual infidelity do not occur independently, and that individuals will choose that type of infidelity as most upsetting that most reliably indicates the occurrence of the other type of infidelity (see also Harris & Christenfeld, 1996). In other

words, certain types of infidelity disturb men more than they disturb women and, vice versa, because they embody, what DeSteno and Salovey (1996) call, a "double-shot" of infidelity. To explain the gender difference in the events that arouse jealousy, they therefore suggest that men will find a mate's sexual infidelity more distressing than a mate's emotional infidelity because they believe that women who are sexually unfaithful will probably also be emotionally unfaithful, but not the opposite. In contrast, women should find a mate's emotional infidelity more upsetting than a mate's sexual infidelity, because they believe that when men are emotionally unfaithful they will probably also be sexually unfaithful, but not the opposite. To test their assumptions, DeSteno and Salovey (1996) calculated the so-called *differential infidelity implication* (DII), a measure of the extent to which individuals believe that one type of infidelity implies the occurrence of the other type more than the opposite.

Besides replicating the findings of Buss et al. (1992), other studies by Harris and Christenfeld (1996), DeSteno and Salovey (1996), and Buss et al. (1999) found support for their assumptions: They found, indeed, that both men and women believed men can have sex without being in love, and that men who fall in love also have sex. In contrast, both men and women believed women were able to fall in love without having sex, and that when women had sex they were also in love. These perceptions were found with regard to members of the opposite sex in general (DeSteno & Salovey, 1996) as well as with regard to one's own partner (Harris & Christenfeld, 1996). In addition, DeSteno and Salovey (1996) found that, when infidelity choice was regressed on DII scores and participant sex, DII scores continued to predict infidelity choice, whereas the sex effect became non-significant.

According to Buss, Larsen, and Westen (1996), however, "the 'double-shot' hypothesis does not provide an account of why the sexes differ in their beliefs about the conditional probabilities of the two

types of infidelity,” offering only a proximate, not an ultimate, explanation of the different events that trigger jealousy in men and women. In response to the “double-shot” hypothesis, Buss et al. (1999) developed more unequivocal operationalizations of infidelity choice. In the original infidelity dilemmas (Buss et al., 1992), sexual and emotional infidelity were not entirely independent, leaving open the possibility that individuals choose a particular type of infidelity because it implies the occurrence of the other one. Buss et al. (1999) therefore modified the original dilemmas and made the two types of infidelity mutually exclusive by explicitly indicating that a mate has been sexually unfaithful but not emotional unfaithful, and vice versa. In addition, Buss et al. (1999) formulated a new dilemma to assess whether men and women also differ in the *aspects* of infidelity they find most upsetting, given the situation that both emotional and sexual infidelity had occurred. In their study, both kinds of dilemmas generated a gender difference: More men than women judged (the aspect of) sexual unfaithfulness to be most upsetting, whereas more women than men selected (the aspect of) emotional infidelity as most upsetting. Although Buss et al. (1999) also found that individuals held strong beliefs about the implications of a mate’s infidelity, in contrast to DeSteno and Salovey (1996) they demonstrated that, in a series of regressions, only the gender of their participants, and not participants’ beliefs concerning the implications of infidelity, explained the gender difference in jealousy.

With one exception, the studies that have examined the events that elicit jealousy have been conducted among heterosexuals. It may not be valid, however, to generalize findings among heterosexuals to homosexuals. The most important reason is that, whereas in some domains of mating psychology homosexuals have been found to respond almost identically to same-sex heterosexuals, in others they have been found to resemble opposite-sex individuals (Bailey, Gaulin, Agyei, & Gladue, 1994). For instance, whereas gay and heterosexual

men highly resemble each other with regard to their interest in uncommitted sex (Bailey et al., 1994; Symons, 1979), lesbian women have been found to show much higher interest in visual sexual stimuli than do heterosexual women (Bailey et al., 1994).

What events are then perceived as most upsetting by homosexual men and women? Only Bailey et al. (1994) have examined whether homosexual men and women (and also heterosexual men and women) differ in the events that trigger jealousy. These researchers did not find a gender difference in the events that triggered jealousy among homosexuals. In addition, they found that lesbian women did not differ from heterosexual women in their reports of distress to a mate’s emotional infidelity. Homosexual men, however, reported far more often than heterosexual men that emotional infidelity was the most upsetting event. As a consequence, gay men and lesbian women did not differ in their responses to the dilemma of infidelity choice. Bailey et al. (1994) attributed the lack of a gender difference between lesbian women and homosexual men to homosexual men’s tolerance of sexual jealousy, making emotional infidelity the more upsetting event among homosexual men. According to Bailey et al. (1994) the decrease in sexual jealousy among homosexual men may be caused by a generalized psychological mechanism (cf. Tooby & Cosmides, 1990; Turke, 1990) that inhibits individuals in investing their resources in children or adults that are nongenetically related. As a consequence, heterosexual men should see their resources put at risk by a partner’s infidelity, whereas homosexual men should not, resulting in less distress in response to a partner’s sexual infidelity.

The present study was conducted to cross-validate and extend the study by Bailey et al. (1994) with regard to homosexuals and to explore the role of beliefs concerning the perceived co-occurrence of emotional and sexual infidelity in the choice of the most upsetting infidelity type. According to the “double-shot” -hypothesis, which event is judged as most upsetting

will depend on an individual's interpretation of infidelity. Thus, individuals are inclined to think that men can have sex without being in love, but that when men fall in love they also have sex. Assuming that gay men in general will interpret their mate's or potential mates' behavior in the same way, it can be expected that gay men will find a mate's emotional infidelity more upsetting than a mate's sexual infidelity (emotional infidelity implies sexual infidelity, but not vice versa).

In a similar vein, according to the double-shot hypothesis, individuals are inclined to believe that women may fall in love without having sex, but that when women have sex they are also in love. Assuming that lesbian women will also interpret their mate's or potential mates' behavior in this manner, it can be expected that lesbian women will find a mate's sexual infidelity more upsetting than a mate's emotional infidelity (sexual infidelity implies emotional infidelity, but not vice versa). Thus, we expected lesbian women to choose sexual infidelity more often than would gay men as the event that would upset them most, and gay men to choose emotional infidelity more often than would lesbian women as the event that would most upset them. However, for the double-shot hypothesis to be true, one would also expect men's and women's infidelity choice to be mediated by beliefs with regard to the co-occurrence of the two types of infidelity. The present study therefore also explored to what extent participants' beliefs with regard to the co-occurrence of infidelity mediated the relation between participant sex and infidelity type chosen as the most upsetting scenario.

The present study closely followed the paradigms that were used among heterosexuals by Buss et al. (1999), Harris and Christenfeld (1996), and DeSteno and Salovey (1996), respectively. Participants were first presented with the six different forced-choice dilemmas developed by Buss et al. (1999). Next (following Harris & Christenfeld, 1996), participants had to rate to what extent they thought sexual infidelity im-

plied emotional infidelity, and vice versa, for their partner. Next, we followed DeSteno and Salovey's (1996) line of reasoning by asking participants to rate the likelihood that sexual infidelity implies emotional infidelity, and vice versa, for members of the gender one generally feels sexually attracted to, namely homosexuals of the same gender. Finally, we asked participants to rate the likelihood that sexual infidelity implies emotional infidelity and vice versa with regard to their own behavior.

Method

Participants

Participants were two hundred and thirty-seven homosexuals—99 lesbian women and 138 homosexual men—with an average age of 32.5 years ($SD = 8.9$ years). Fifty-nine percent of the participants (139) were currently involved in a steady homosexual relationship, of which more were women than were men (67% vs. 53%). In addition, lesbian women reported having had considerably fewer sex partners ($M = 5.81$, $SD = 5.65$) than did homosexual men ($M = 37.56$, $SD = 108.50$; $t = 3.13$, $p < .01$). Homosexuality was measured by means of a 7-point scale on which participants rated their level of homosexuality (1 = complete homosexuality, 7 = complete heterosexuality). Originally, 280 subjects participated, but 43 were discarded because they were bisexual—that is, they scored 4 or higher on the homosexuality scale. On the homosexuality scale on average, the remaining male participants scored 1.40 ($SD = .63$) and the remaining female participants scored 1.73 ($SD = .77$).

Procedure

Participants were recruited in gay bars in several Dutch towns. Participants were asked to fill in a questionnaire after which they returned it to the experimenters. Eighty-eight participants (37%) had consumed alcohol, and two participants (1%)

had used drugs, prior to filling in the questionnaire. In addition, as a supplement to the local magazine of the gay community, questionnaires were sent to members of the local homosexual community in Groningen. Participants filled in the questionnaires at home and returned them by mail.

Questionnaires

Infidelity choice. In total, participants were presented with six forced-choice dilemmas developed by Buss et al. (1992, 1999). Each dilemma consisted of two infidelity scenarios which asked participants which type of infidelity would upset them the most.¹ Participants were first presented with the two dilemmas that were used by Buss et al. in their initial study in 1992. First, participants were asked to choose between:

- A. Imagining your partner enjoying passionate sexual intercourse with that other man/woman.
- B. Imagining your partner forming a deep emotional attachment to that other man/woman.

The second dilemma asked participants to choose between:

- A. Imagining your partner trying different sexual positions with that other man/woman.
- B. Imagining your partner falling in love with that other man/woman.

Then participants were presented with the first of three dilemmas (Buss et al., 1999) in which the two types of infidelity were made mutually exclusive. The third dilemma read as follows:

- A. Imagining that your partner is still sexually interested in his/her former lover, but is no longer in love with this person.
- B. Imagining that your former lover is still

emotionally involved with his/her former lover, but is no longer sexually interested in this person.

The fourth dilemma assessed which aspect of infidelity the participants would find most upsetting given the situation in which both types of infidelity occurred. The dilemma was introduced thus: "Imagine that your partner formed an emotional attachment to another man/women and had sexual intercourse with that other person. Which aspect of your partner's involvement would upset you more?" Participants then had to choose between:

- A. The sexual intercourse with that other person.
- B. The emotional attachment to that other person.

Like the third dilemma, the fifth and sixth dilemma presented participants with two types of infidelity that were mutually exclusive. The fifth dilemma read as follows:

- A. Imagining your partner having sexual intercourse with another man/woman, with no chance of any further emotional involvement.
- B. Imagining your partner becoming emotionally involved with another man/woman, with no chance of any sexual involvement.

Finally, in the sixth dilemma participants had to choose between:

- A. Imagining your partner having sexual intercourse with another man/woman, but you are certain that they will not form a deep emotional attachment.
- B. Imagining your partner forming a deep emotional attachment with another man/woman, but you are certain that they will not have sexual intercourse.

The scores on the six dilemmas were assigned a zero when participants chose emotional infidelity as the most upsetting event, and a 1 when participants chose sexual infi-

1. In all six dilemmas the gender of the person with whom one's partner was being unfaithful was the same as the gender of the participant.

delity as the most upsetting event. Then the scores on the six dilemmas were summed to create a scale assessing to what extent individuals thought emotional (0) or sexual infidelity (6) was the most upsetting event. Cronbach's alpha for this scale was .84.

Beliefs about the implications of infidelity.

Six questions asked about the implications of infidelity for three target persons—namely one's partner (Harris & Cristenfeld, 1996), the typical homosexual of the same gender (following DeSteno & Salovey, 1996), and oneself. All items were assessed on 7-point scales (1 = not likely; 7 = very likely).

Closely following the wording of Harris and Christenfeld (1996), estimates of the likelihood of sexual infidelity leading to emotional infidelity for one's partner were assessed by asking participants to: "Imagine that you discover that your mate has sexual contact with another man/woman.² How likely do you think it is that your partner also is in love with this person?" Estimates of the likelihood of emotional infidelity leading to sexual infidelity for one's partner were assessed by asking participants to: "Imagine that you discover that your mate falls in love with someone else. How likely do you think it is that your partner is also engaging in sex with this other person?"

DeSteno and Salovey (1996) assessed implications of infidelity among heterosexuals by asking participants to rate the likelihood of one type of infidelity implying the other one for the "typical member of the opposite sex." However, because homosexual men and women are attracted to same-sex individuals, our study assessed implications of infidelity for the typical homosexual of the same gender. The questions were framed identically to the questions assessing implications of infidelity for one's partner except for the identity of the target person. With regard to the typical homosexual of the same gender, homosexual men

were to answer both questions for "C.G., the typical homosexual man" and lesbian women for "M.R. the typical lesbian woman."

The questions assessing implications of infidelity for oneself were framed identically, except that the infidelity referred to one's own behavior.

Results

Test of the basic hypothesis

An analysis of variance (ANOVA) using Sex of Participant as a between-subject factor on the summed scores of the six dilemmas showed that homosexual men and women differed in the events that aroused jealousy ($F(1,211) = 7.48, p < .001$).³ A contrast analysis showed that in choosing between the two forms of infidelity, on average, homosexual women reported sexual infidelity as more distressing ($M = 3.05, SD = 2.14$) than did homosexual men ($M = 2.25, SD = 2.14; t = 3.11, p < .01$). Homosexual men, therefore, reported more distress over a mate's emotional infidelity than did homosexual women.

Because in the present study more women than men were involved in a steady homosexual relationship, the relation between relationship involvement and infidelity choice was also examined. An ANOVA was conducted using infidelity choice as the dependent variable (the summed variable) and participant sex and relationship involvement as independent variables. The ANOVA revealed a significant main effect of participant sex ($F(1,208) = 4.36, p < .05$), as well as a significant interaction effect between participant sex and relationship involvement ($F(1,208) = 11.88, p < .01$): The sex difference in infidelity choice emerged only among participants who were involved in a steady relationship ($M = 4.2$ vs. $M = 2.5; F(1,208) = 19.10, p < .001$), not among those not involved in such a relationship ($M = 3.3$ vs. $M = 3.7; F(1,208) = .77, ns$). The main effect of relationship involvement was

2. In all six dilemmas the gender of the person with whom one's partner was being unfaithful was the same as the gender of the participant.

3. Missing data reduced sample size to $n = 212$.

not significant ($F(1,208) = .12, ns$).

Analyses were also conducted on the six dilemmas separately (see Fig. 1). With regard to the first dilemma, one of the dilemmas used by Buss et al. in their first study (1992) was that more women (51%) than men (32%) reported that sexual infidelity would cause greater distress than emotional infidelity ($\chi^2 = 7.87, p < .01$). With regard to the second dilemma that was used by Buss et al. in 1992, analysis showed that men and women did not differ significantly in their choice of the most distressful event ($\chi^2 = .47, p = ns$): 23% of the men and 26% of the women reported sexual infidelity as the most upsetting event. In their responses to the third dilemma, that presented participants with mutually exclusive infidelities, men and women only differed slightly ($\chi^2 = 3.32, p < .10$), with more women (59%) than men (47%) choosing sexual infidelity as the most upsetting event. The fourth dilemma, which assessed participants' reactions toward different aspects of a mate's infidelity, also differentiated between men and women ($\chi^2 = 7.97, p < .001$): Women

(51%) more often than men (32%) thought a mate's sexual infidelity was more upsetting. On the fifth dilemma, which presented participants again with mutually exclusive infidelities, men and women also differed in their responses ($\chi^2 = 6.49, p = .01$): Women (59%) more often than men (41%) judged a mate's sexual unfaithfulness to be more distressful. Finally, on the sixth dilemma, which also presented participants with mutually exclusive infidelity types, men and women did not differ significantly in their choice of the most upsetting infidelity: 50% of the men and 61% of the women selected sexual infidelity as the most upsetting event.

Averaged over the six dilemmas, women (51%) more often than men (32%) reported a mate's sexual infidelity as more distressful than a mate's emotional infidelity. The results therefore confirmed the prediction that lesbian women would choose more often than gay men sexual infidelity as the event that would upset them more, and gay men would choose more often than lesbian women emotional infidelity as the

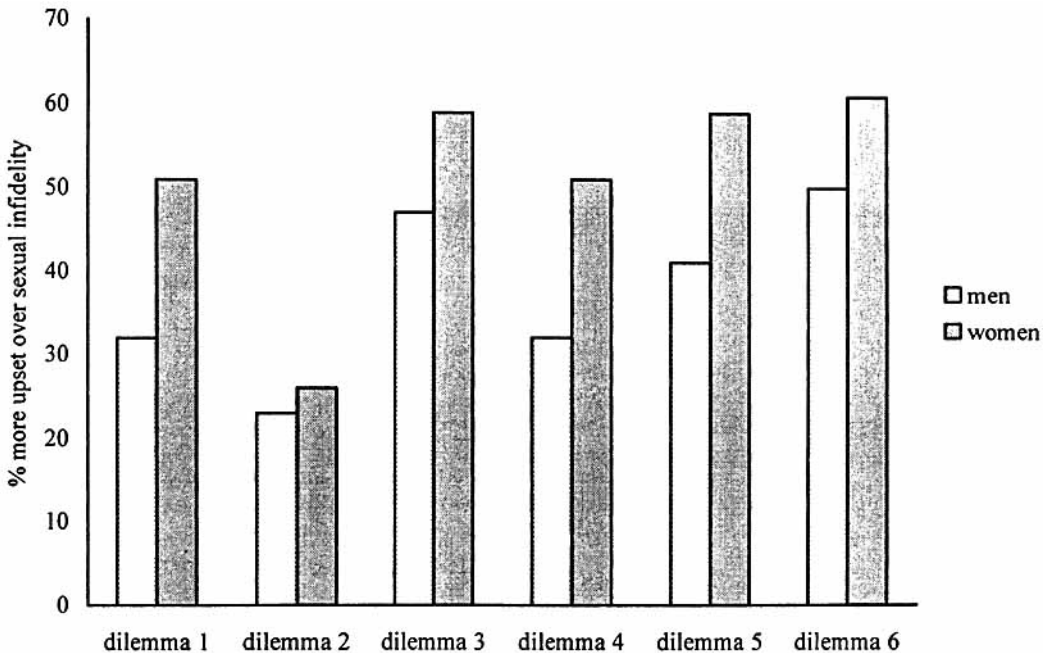


Figure 1. Percentage of subjects reporting more distress to a partner's sexual infidelity.

event that would upset them more. It must be noted, however, that the women were almost evenly split in choosing between the two types of infidelity and that only the men seemed to show a sizable difference in choosing between the two types of infidelity, with the majority of gay men (63%) reporting feeling more troubled over a mate's emotional infidelity. The gender difference in infidelity choice therefore seems to be primarily driven by men's responses.⁴

Beliefs about implications of infidelity

To examine whether participants believed one type of infidelity implied the other one, ANOVAs were conducted on the two measures of implications (i.e., the extent to which participants thought sexual infidelity implied emotional infidelity, and vice versa). Participant Sex was included as a between-subject variable, and the extent to which participants believed one type of infidelity implied the other one as a within-subject factor with two levels. Separate analyses were performed for each target person (partner, typical homosexual of the same sex, and oneself).

Partner. With regard to the partner, analyses revealed a main effect of Implication ($F(1,229) = 42.71, p < .001$), indicating that participants thought it more likely that sexual infidelity leads to emotional infidelity than vice versa. Also, the main effect of Participant Sex was marginally significant ($F(1,229) = 3.09, p < .01$). Lesbian women thought it somewhat more likely that one type of infidelity implies the occurrence of the other type of infidelity than homosexual men did. Both main effects, however,

were qualified by an interaction between Participant Sex and Implication ($F(1,229) = 55.17, p < .001$). Lesbian women thought it more likely that sexual infidelity implies emotional infidelity more than the opposite ($M = 5.06$ vs. $M = 2.83$; $F(1,97) = 87.33, p < .001$), whereas gay men did not believe one type of infidelity implies the other type more than the converse ($M = 3.59$ vs. $M = 3.73$; $F(1,132) = .46, ns$; see Table 1).

Typical homosexual of the same sex. With regard to the typical homosexual of the same sex, the analysis of variance revealed a main effect of Participant Sex ($F(1,230) = 17.94, p < .001$). Lesbian women believed it more likely that one type of infidelity implies the occurrence of the other type of infidelity than homosexual men did. The analysis also showed a marginally significant main effect of Implication ($F(1,230) = 3.60, p < .10$) that was qualified by an interaction between Participant Sex and Implication ($F(1,230) = 99.59, p < .001$). Homosexual men believed it more likely that emotional infidelity suggests sexual infidelity than the opposite ($M = 4.65$ vs. $M = 3.07$; $F(1,133) = 79.08, p < .001$). Lesbian women, in contrast, thought it more likely that sexual infidelity implies emotional infidelity than the opposite ($M = 3.93$ vs. $M = 5.00$; $F(1,97) = 30.61, p < .001$; see Table 1).

Oneself. With regard to oneself, the analysis revealed a main effect of Participant Sex ($F(1,229) = 45.17, p < .001$). Lesbian women thought it more likely that one type of infidelity implies the occurrence of the other type of infidelity than homosexual men did. The analysis also revealed a main effect of Implication ($F(1,229) = 42.71, p < .001$), indicating that participants believed it more likely that sexual infidelity implies emotional infidelity than vice versa. Finally, the interaction-effect between Participant Sex and Implication ($F(1,229) = 26.72, p < .001$) indicated that lesbian women thought it more likely that sexual infidelity implies emotional infidelity than the opposite ($M = 4.94$ vs. $M = 3.33$, $F(1,97) = 41.79, p < .001$), whereas homosexual men did not

4. Because questionnaires were partially filled in bars, an analysis was conducted to examine whether alcohol consumption affected subjects' infidelity choice. Analyses showed that men and women differed in their choice of infidelity when they had not consumed alcohol prior to filling in the questionnaire ($M = 4.15$ vs. $M = 2.78$; $F(1,204) = 13.29, p < .001$), whereas they did not differ when they had consumed alcohol prior to filling in the questionnaire ($M = 3.29$ vs. $M = 3.36$; $F(1,204) = .03, ns$).

Table 1. Mean estimates of the likelihood that one type of infidelity implies the other type as a function of participant sex and target

	Sex Implies Love	Love Implies Sex
Partner's infidelity		
Men	3.59 ^A	3.73 ^A
Women	5.06 ^A	2.83 ^B
Typical same-sex homosexual		
Men	3.07 ^A	4.65 ^B
Women	5.00 ^A	3.93 ^B
Oneself		
Men	3.48 ^A	3.51 ^A
Women	4.94 ^A	3.30 ^B

Note: Superscript letters refer to comparisons within rows. Means with different superscripts differ significantly ($p < .001$).

think one type of infidelity implies one type more than the converse ($M = 3.48$ vs. $M = 3.51$, $F(1,132) = .01$, *ns*; see Table 1).

Differential infidelity implication.

In addition, in accordance with DeSteno and Salovey, the so-called differential infidelity implication (DII; DeSteno & Salovey, 1996) was calculated separately for one's partner, the typical homosexual of the same sex, and oneself. The DII values for the three targets were calculated by subtracting participants' likelihood judgment of sexual infidelity implying emotional infidelity from their likelihood judgment of emotional infidelity implying sexual infidelity for the particular target person. If participants believe that emotional infidelity indicates sexual infidelity more than the opposite, the value of DII is positive.

A MANOVA using Participant Sex as a between-subject variable and Target Person as a within-subject variable with three levels (Partner, Typical Same-sex Homosexual, Oneself) was performed on participants' DII scores for their partner, the typical homosexual of the same sex and themselves. The analysis revealed main effects of both Participant Sex ($F(1,224) = 95.79$, $p < .001$) and Target Person

($F(2,448) = 31.13$, $p < .001$) as well as an interaction between these two variables ($F(2,448) = 4.56$, $p < .05$). Homosexual men, more than lesbian women, believed on average that emotional infidelity signals sexual infidelity more than the opposite ($M = .56$ vs. $M = 1.66$, $t = 9.79$, $p < .001$). However, the interaction effect indicated that this gender difference was qualified by the effect of Target Person.

First, whereas lesbian women believed that their partner's sexual infidelity implied their partner's emotional infidelity more than the opposite, homosexual men did not differentiate between the two types of inferences ($M = -2.27$ vs. $M = .09$, $t = 7.46$, $p < .001$). With regard to the typical homosexual of the same sex, lesbian women thought that sexual infidelity implies emotional infidelity more than the opposite, whereas homosexual men believed the converse—that is, emotional infidelity implies sexual infidelity more than the opposite ($M = -1.09$ vs. $M = 1.58$, $t = 9.98$, $p < .001$). Finally, with regard to their own behavior, lesbian women again thought that sexual infidelity implies emotional infidelity more than the opposite, whereas homosexual men did not think one type of infidelity implies the other one more than the opposite ($M = -1.63$ vs. $M = .00$, $t = 5.12$, $p < .001$).

Mediational analyses

To examine whether the relation between participants' sex and infidelity choice is mediated by participants' beliefs about the implications of infidelity, as suggested by the "double-shot" hypothesis, various regression analyses were performed. For mediation to occur, three effects should be significant (Baron & Kenny, 1986): the effect of participant sex on participants' beliefs, the effect of participant sex on infidelity choice, and the effect of participants' beliefs on infidelity choice when controlled for participant sex. The first two effects have already been demonstrated. In addition, when infidelity choice was regressed on both participant sex and participants' beliefs separately for each of the three targets, participants' beliefs remained predictive of infidelity choice for all three targets (partner $\beta = .31, p < .001$; the typical homosexual of the same sex: $\beta = .18, p < .05$; oneself: $\beta = .34, p < .001$), whereas the effect of participant sex sank to nonsignificant levels in all three cases (β s $< |.09|, ns$). Thus, with regard to all three target persons, the effect of participants' sex on infidelity choice was mediated by the beliefs men and women held concerning the implications of infidelity.

Mediational analyses were also performed separately for the summed scores of the two original infidelity dilemmas (Buss et al., 1992) and for the summed scores of the four dilemmas in which both types of infidelity were made mutually exclusive (Buss et al., 1999). When participants' infidelity choice on the original dilemmas were regressed on both participant sex and participants' beliefs, participants' beliefs proved a significant predictor of infidelity choice for two of the three target persons—that is, for the partner ($\beta = .23, p < .01$) and oneself ($\beta = .15, p < .05$; the typical homosexual of the same sex: $\beta = .13, ns$), whereas the effect of participant sex sank to nonsignificant levels in all three cases (β s $< |.08|, ns$). When infidelity choice on the mutually exclusive dilemmas was regressed on both participant sex and

participants' beliefs, participants' beliefs again remained predictive of infidelity choice for all three target persons (partner: $\beta = .31, p < .001$; the typical homosexual of the same sex: $\beta = .18, p < .05$; oneself: $\beta = .38, p < .001$), whereas the effect of participant sex went to nonsignificant levels (β s $< |.09|, ns$). Thus, for both types of dilemmas, beliefs about the co-occurrence of emotional and sexual infidelity mediate the effect of participants' sex on infidelity choice.

Additional analyses

Because the participants in our study were on average somewhat older ($M = 33.6$ years for men and $M = 30.9$ years for women) than participants in comparable studies among heterosexuals (often college students, e.g., Buss et al., 1999; Buunk et al., 1996), the relation between participants' age and infidelity choice was examined. In choosing between infidelity types, homosexual men, as they grow older, more often chose emotional infidelity as the most upsetting event ($r = .22, p < .01$). Among lesbian women, however, there was no relation between infidelity choice and age ($r = -.04, ns$). A possible explanation is that with time men learn that sexual infidelity does not threaten the relationship. Indeed, homosexual men's age was also related to the number of sex partners they reported ($r = .20, p < .05$), whereas age in lesbian women was not related to the number of sex partners they had had ($r = -.01, ns$).

Also, the more sex partners that homosexual men reported having, the more inclined they were to choose their mate's emotional infidelity as the most upsetting event ($r = .25, p < .01$). For lesbian women, however, infidelity choice and number of sex partners were not significantly related ($r = -.10, ns$). When the relation between age and infidelity choice was adjusted for the number of sex partners that homosexual men had had, the relationship remained significant ($r = .18, p < .05$). Apparently, when homosexual men grow older, they tend to change their judgment about what

is the most upsetting type of infidelity, relatively independent of their experience with sex partners. When the relationship between the number of sex partners and infidelity choice was adjusted for age, it also remained significant ($r = .22, p < .05$), suggesting that, with a growing number of sex partners, homosexual men gradually get used to the extra-dyadic sex of their partners (see also Buunk, 1982). Thus, these results indicate that at least two processes, first a "maturity" effect and second a "sexual experience" effect, independently affect homosexual men's choice for the most upsetting type of infidelity.

Discussion

The present study examined whether homosexual men and women differ with regard to the type of infidelity they perceive as more upsetting—that is, a mate's sexual or emotional infidelity. The results partly replicated the study by Bailey et al. (1994). Whereas Bailey and colleagues did not find a gender difference among homosexuals, the present study found support for the prediction derived from the double-shot hypothesis: More lesbian women than gay men chose a mate's sexual infidelity as the most upsetting event, whereas more gay men than lesbian women chose a mate's emotional infidelity as the most upsetting event. Consistent with the double-shot hypothesis, the present study also found that participants' beliefs mediated the effect of participant gender on infidelity choice.

Our finding that more lesbian women than gay men chose a mate's sexual infidelity as the most upsetting event, whereas more gay men than lesbian women chose a mate's emotional infidelity as the most upsetting event, suggests that homosexuals respond in the same way as heterosexuals of the opposite sex. That is, gay men resemble heterosexual women, whereas lesbian women resemble heterosexual men. Compared to the lesbian women in the study of Bailey et al. (1994), therefore, the lesbian women in the present study responded in a relatively masculine heterosexual fashion.

A possible explanation is that the lesbians in the Bailey et al. study were about 7 years younger than the lesbians in the present study who on average were in their thirties. Assuming that, in general, lesbians are more masculine in their attitudes than heterosexual women (Pillard, 1991), it is possible that, as they age, lesbians will increasingly accept their homosexuality. In addition, compared with other cultures, people in the Netherlands appear to have very liberal attitudes about sexuality for both men and women (Hofstede, 1984). Indeed, it has already been argued that the Netherlands provides an especially rigorous context in which to test sex differences in sexual jealousy (Buunk et al., 1996; Dijkstra & Buunk, 1998).

Our finding that homosexuals respond in a similar way to opposite-sex heterosexuals could be explained by the fact that, consistent with the double-shot hypothesis, the choice of infidelity type is sensitive to one's partner's sex rather than one's own sex. Both the present study, and previous studies among heterosexuals, show that in response to a male partner's infidelity, individuals more often choose emotional infidelity as more upsetting, whereas in response to a female mate's infidelity they are about equally split with regard to the type of infidelity they find most upsetting. Therefore, jealousy responses may be couched in terms of a simple decision rule such as "Become jealous of potential and actual infidelities by one's partner, and be especially concerned over male emotional infidelity."

It must be noted, however, that homosexual men and women only differed in their infidelity choice when they were involved in a committed homosexual relationship. When they were not, men and women did not differ in the type of infidelity they thought was most upsetting. In other words, the decision rule just mentioned seems to be activated only when individuals actually have a long-term mate. If not, individuals may make a choice based upon recollections or cognitions about infidelity of former or hypothetical partners.

This cognitive recollection or representation, however, may not activate the same underlying mechanism and decision rules on which infidelity choice is based in individuals who are in committed relationships.

Comparable to previous findings that among heterosexuals the gender difference is primarily driven by women (e.g., Buunk et al., 1996; Buss et al., 1999; Wiederman & Algeier, 1993; Wiederman & Kendall, 1999), among homosexuals the gender difference in infidelity choice was primarily driven by men. The finding that gay men more often find emotional infidelity more upsetting than sexual infidelity could be explained by gay men's pursuance of a reproductive strategy that is heavily biased toward mating effort in contrast to parental effort. Relative to heterosexual standards, gay men in general have many sexual partners while they do not invest in offspring. Assuming that sexual jealousy functions to enhance paternity certainty, gay men may therefore not "need" to feel sexually jealous. In other words, among men the trade-off between parental and mating effort may be reflected in their infidelity choice, with a reproductive strategy emphasizing parental effort being reflected in the choice for sexual infidelity as the most upsetting event, and a reproductive strategy biased toward mating effort being reflected in the choice of emotional infidelity as the most upsetting event. This explanation was supported by our finding that homosexual men who had more sex partners, and thus followed a strategy biased more toward mating effort, reported emotional infidelity more often as the most upsetting event.

It is also possible that individuals become used to the extra-dyadic sex of their mate, and become less jealous in response to a mate's sexual infidelity as a consequence. Studies by Buunk (1982, 1995) show that the more common the past extramarital involvement of the partner is, the lower the feelings of sexual jealousy. This may be particularly true for gay men because gay men have partners who commonly engage in extra-dyadic sex (Bringle,

1995; Buunk & Van Driel, 1989; Symons, 1979). Consistent with this explanation we found that as homosexual men aged and had had more sex partners, and thus may have been confronted more often with a mate's extra-dyadic sex, they reported emotional infidelity more often as the most upsetting event. In addition to adapting to a mate's sexual infidelity, gay men, compared to heterosexuals and lesbian women, may often have relationships in which it is expected and understood that their partner will have extra-dyadic sexual affairs without consequences for the primary relationship. As a result, gay men will be relatively likely to find a mate's emotional infidelity more upsetting than a mate's sexual infidelity.

The present study also found that beliefs concerning the co-occurrence of sexual and emotional infidelity mediated the effect of participant sex on infidelity choice. Surprisingly, this was found to be true even for those dilemmas that were constructed to be mutually exclusive; that is, although presented as two mutually exclusive types of infidelity, individuals' beliefs about their co-occurrence still affected their decision making with regard to the most upsetting type of infidelity. A possible explanation is that, in many cases of infidelity, the two types of infidelity co-occur. For instance, Thompson (1984) found that 20% of the men and women in committed relationships had had extra-dyadic affairs that included both sexual and emotional involvement. Moreover, infidelity, including both sexual and emotional involvement, poses a much stronger threat to the existence of the primary relationship than cases of "pure" emotional or sexual infidelity (Thompson, 1984; DeSteno & Salovey, 1996). Because of its relatively large destructive consequences, individuals may therefore remain vigilant and suspicious with regard to a "double-shot" of infidelity, even when confronted with an apparent "single shot" of infidelity.

Although DeSteno and Salovey (1996) presented the double-shot hypothesis as an alternative to the evolutionary psychologi-

cal account presented by Buss et al. (1992, 1999), the two theories present explanations on different levels. Whereas an evolutionary psychological account presents an ultimate explanation of why the sexes differ in the events that trigger jealousy, the double-shot hypothesis attributed the difference between men and women to proximate causes (i.e., to beliefs with regards to a mate's infidelity). Indeed, instead of offering an alternative and incompatible theory, DeSteno and Salovey's theory is quite consistent with an evolutionary psychological framework. As suggested by our findings with regard to the mediational role of double-shot beliefs, it is very well possible that beliefs with regard to the co-occurrence of sexual and emotional infidelity are the proximate means through which evolved mechanisms produce sex differences in the elicitors of jealousy (Buss et al., 1996; Wiederman & Allgeier, 1993).

It must be noted, however, that caution should be exercised in comparing our results to those of previous studies. Certainly this study would have benefited by including a control group of heterosexual men and women (from the same general population). Despite this limitation, the present study contributes to the literature in a number of ways. First, it adds to the literature on jealousy by providing valuable information about jealousy among homosexuals. This is the more relevant because only three studies have been published on this topic (Bringle, 1995; Hawkins, 1990; Bailey et al., 1994), of which only one included lesbian women (Bailey et al., 1994). Second, more generally, our findings may contribute to a better understanding of ho-

mosexual mating psychology. The discovery that, with regard to the type of infidelity they find most upsetting, homosexuals resemble heterosexuals of the opposite sex, contrasts with previous studies that show that homosexuals closely resemble heterosexuals of the same sex.

For instance, with regard to mate selection criteria, both gay men and heterosexual men highly value a potential mate's physical attractiveness (Bailey et al., 1994; Deaux & Hanna, 1984; Kenrick et al., 1995; Sergios & Cody, 1985/86), whereas both lesbian women and heterosexual women are interested in same-aged sex partners and long-term sexual relationships (Buunk & Van Driel, 1989; Kenrick et al., 1995; Symons, 1979). Their resemblance to both heterosexuals of the opposite sex and heterosexuals of the same sex makes homosexuals' mating psychology quite complex, being sometimes influenced more by their own gender and sometimes more by the gender of their sex partners. Third, by using the same research paradigms as studies on heterosexual jealousy, the present study may cast light on the processes that underlie the sex differences in the events that elicit jealousy, regardless of an individual's sexual orientation. For example, the present study suggests that jealousy is influenced by the sex of one's partner rather than one's own sex. Finally, the provocative finding of the present study suggests that further research into sex differences in jealousy among homosexuals may advance our understanding of mating psychology in both homosexuals and heterosexuals.

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